State Board Members and EPA Bay Delta Meeting

Draft Agenda 6-10-14
1001 I Street, Sacramento

1. Introductions

- EPA attendees will include: Erin Foresman, Valentina Cabrera, Tim Vendlinski, John Kemmerer, and Jane Diamond

2. Bay Delta WQCP: Phase I

- EPA will briefly walk through some of the concerns we previously raised in our comment letter regarding the proposed criteria.
- EPA has been clarifying with our HQ how this criteria will be interpreted by EPA.
- 50% unimpaired flow seems to be able to provide many ecological functions, 35% does not. CWA requires beneficial use attainment.
- EPA has a contract with Tetratech to analyze the flows that would be needed to attain the temperatures required by salmonids. Results will be used to compare proposed % unimpaired flow to beneficial use attainment.

3. Briefly discuss Bay Delta WQCP Phase II

- EPA prefers a year-round salinity or flow based standard rather than the % unimpaired flow approach. The modified objective and compliance method(s) ideally would be based on elements that can be directly measured, such as salinity and/or outflow. The salinity or outflow range identified for the objective should be based on a reference period when native fish populations were more resilient (e.g, 1978 – 1999) and reflect seasonal and annual variation in California hydrology (e.g., lower salinities/X2 in spring, higher salinities/X2 in fall, blocked by water year type).
- EPA is contracting with Tetratech to develop a cost estimate / feasibility study for a permanent bottom salinity monitoring network and to add two additional outflow measurement locations.
- BDCP is proposing to move the electrical conductivity (salinity) objective at Emmaton to a compliance location four miles upstream at Three-Mile Slough. The BDCP DEIS estimates substantial salinity intrusion and exceedence of the EC objective at the Emmaton compliance location. Moving the compliance point upstream relaxes the salinity standard and allows more salinity intrusion into the upper estuary. Is the SWRCB planning to address the proposal to move the compliance point through the WQCP update or through another mechanism like the petition to change the point of diversion for BDCP intakes?

unimpaired flow approach vs functional flow approach

EPA favors salinity-based or flow-based objectives as they can be measured directly whereas the UF approach can only be referenced in [illegible]

4. Flow impairments on the upcoming 303(d) list

- EPA has been approached by the Earth Law Center about our duty to list flow impairments on the 303(d) list for waterbodies where there is readily available information. Their top ten waters of concern include the San Joaquin River and the Delta region. We know they have also approached the State and provided a sizable data submittal for the administrative record during the last call for data.

State Board & EPA Meeting re: Revisions to the Bay Delta Water Quality Control Plan (WQCP) for the San Joaquin River and South Delta (Phase 1)
June 10, 2014 Sacramento

Key Issues Raised in EPA's Comment Letter

Year-round narrative flow criteria: We recommend adopting year-round flow criteria to ensure hospitable instream conditions for aquatic life throughout the year, and to guard against sudden, increases in diversions once the compliance period ends (FEB-JUN). The State Board staff are concerned that they would need to restart the entire CEQA process to extend the seasonality of the flow criteria to year-round, but they might not need to do so if they revised their narrative criteria to apply year-round.

Measurable and enforceable criteria: The proposed narrative objective contains vague and undefined language that will make it difficult to measure and determine whether or not the desired outcome is being reached. We recommend replacing vague language with quantitative performance targets that can be measured. Recently, The Bay Institute and the federal and State fish agencies proposed incorporating biocriteria into the Phase 1 Plan that interpret the existing *salmon doubling objective* into measurable numeric endpoints. Adding or referring to such biocriteria and quantitative performance targets in the Phase 1 Plan would significantly strengthen the Plan and drive it toward consistency with the Clean Water Act.

Increased flow requirement: 35% Unimpaired Flow (UF) is not an adequate level of flow to protect the beneficial uses [and would not be approvable.] It essentially codifies into the Phase 1 Plan current conditions which are already contributing to the decline of fish populations [EPA calculated that 33.5% UF is the current median condition]. We consider the 60% UF level (as delineated in two Flow Reports issued by SWRCB and CDFW in 2010) as the most legally defensible from a Clean Water Act standpoint. However, some scientific evidence indicates that a 50% UF level would activate and protect most essential ecological functions. The 35% UF level does not achieve the minimum flows laid out by CDFW or FWS for sensitive anadromous species, and a robust body of scientific evidence and opinion argue for significantly higher levels of UF than what is proposed in the Phase 1 Plan (e.g., 80-90% UF elsewhere in the United States).

Increase adaptive management range and better defined adaptive management structure: We understand that the adaptive management program envisioned in the Phase 1 Plan will be refined with greater clarity about the criteria used to increase or decrease flow volumes. As it stands, and within the context of immense political pressure and competing demands for a diminishing supply of water, we are concerned that the 25-45% UF range will default to 25% UF (worse than current conditions) and remain there. We urge you to develop a more detailed adaptive management approach that guards against this worst case scenario.

Current thinking on WQCP Phase I Revisions:

- EPA's HQ and Regional offices are in agreement that the flow criteria narrative as well as the numeric % UF in the Program of Implementation will be viewed as a water quality standard for review under the Clean Water Act.
- As currently drafted the flow criteria does not protect sensitive uses or protect beneficial uses and is not approvable under the Clean Water Act.
- EPA will have to do Section 7 consultation on the action we take.
- We would like to work with the Board to develop a criteria that protects beneficial uses and sensitive species requirements.
- A long compliance period is preferable to a criteria that on its face does not protect uses.
- We have some contract resources available for modeling support if that is helpful.

Tom Hagler
thinks that
Compliance
Periods/Sche
max out
5-2

Valentina is generating an EPA version of this chart … will update materials when ready

Flows and CRR (Excerpt from The Bay Institute comments)

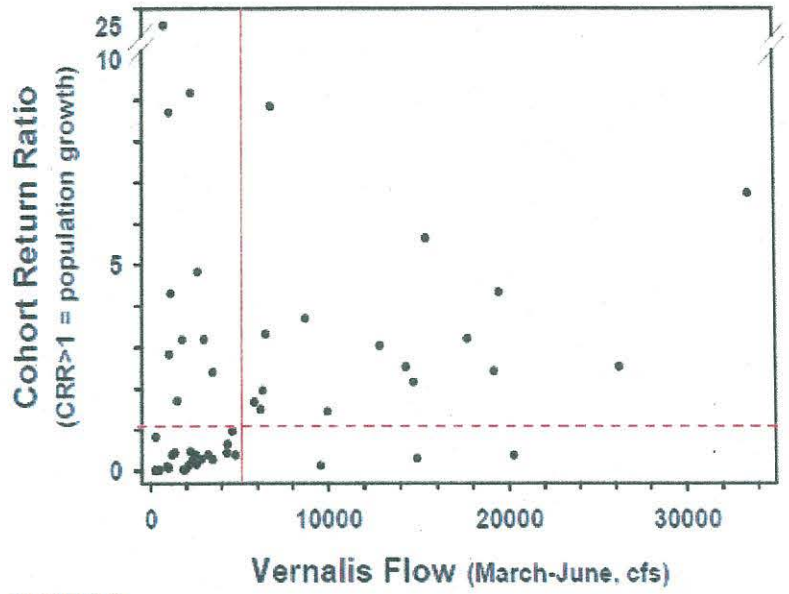

FIGURE 10:
Relationship between cohort return ratio and springtime flow at Vernalis measured 2.5 years earlier, when the juveniles of each annual cohort were migrating downstream. Horizontal dashed line shows cohort return ratio of 1.0. Vertical line shows average March-June Vernalis flows of 5,000cfs. In most years with Vernalis flows < 5,000cfs, the cohort return ratio was negative, indicating population decline.
Sources: CDFG GrandTab file for escapement and California DWR Dayflow file for Vernalis flows.

Notes on the Graph: Salmon population growth was negative in two-thirds of years when spring San Joaquin River inflows were below 5000 cfs. Conversely, growth was positive 84% of years when inflows were in excess of 5,000 cfs.

CRR Explained: The Cohort Replacement Rate (CRR) is a parameter used to describe the number of future spawners produced by each spawner and is thus a measure of whether the population is increasing or decreasing. This spawner-to-spawner ratio is defined as the number of naturally produced and naturally spawning adults in one generation divided by the number of naturally spawning adults (regardless of parentage) in the previous generation. When this rate is 1.0, the subsequent cohort exactly replaces the parental cohort and the population is in equilibrium, neither increasing nor decreasing. When the rate is less than 1.0, subsequent cohorts fail to fully replace their parents and abundance declines. If the ratio is greater than 1.0, there is a net increase in the number of fish surviving to reproduce naturally in each generation and abundance increases.[1] A CRR of ~8.8[2] is typical for Chinook salmon. Currently, the CRR estimated for the Stanislaus River by TBI is less than 0.2; anything less than 1.0 is trending towards extinction.

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[1] This description is excerpted from the August 2008 Biological Assessment on the Continued Long-term Operations of the Central Valley Project and the State Water Project https://www.usbr.gov/mp/cvo/OCAP/sep08_docs/OCAP_BA_005_Aug08.pdf

[2] Quinn, TP. 2005. The behavior and ecology of Pacific salmon and trout. , Maryland: American Fisheries Society as cited in Table 1, pp 10 in Williams, G. J. 2010. Life History Conceptual Model for Chinook salmon and Steelhead. DRERIP Delta Conceptual Model. Sacramento (CA): Delta Regional Ecosystem Restoration Implementation Plan.
http://www.dfg.ca.gov/ERP/drerip_conceptual_models.asp